THE RULES OF ZOÖLOGICAL NOMENCLATURE.*—In republishing these rules accompanied by many valuable notes and comments, Prof. Verrill has done good service to zoölogy in this country. A copy of these rules and those of the British Association, reviewed by Prof. Gray in a previous number of Silliman's Journal, should be in the hands of every zoölogist.

NATURAL HISTORY MISCELLANY.

BOTANY.

ARTIFICIAL PREPARATION OF SUBSTANCES FOUND IN PLANTS AND ANIMALS.—Dr. Debus, the President of the Chemical Section of the British Association, states: "It has already become possible to prepare in the laboratory bodies of a very complex character, and which a few years ago were only found in the bodies of animals or plants. Alizarine, the beautiful compound of the madder-root, has been obtained by artificial means in the course of the year by Messrs. Liebermann and Græbe. Results of such a nature render it highly probable that, at no distant period, it will be in our power to prepare, artificially, nearly all, if not all, the substances found in plants and animals. Here I must not be misunderstood. Organic structures, such as muscular fibre or the leaves of a tree, the science of chemistry is incapable of producing, but molecules, like those found in a leaf, or in the stem of a tree, will no doubt one day be manufactured from their elements.—*Scientific Opinion.*

MAPLE-SEED, THREE WINGED.—I know not if it be common, and, therefore, ask for information, but on a tree of the *Acer saccharinum*, or sugar maple, in the Central Park in this city (New York) I found, a few days since, a three-winged seed. The description of the genus says, "ovary 2-celled. From the back of each ovary grows a wing, converting the fruit into two 1-seeded, at length separable, closed samaras or keys." (Gray.) I only found this one, though the trees were covered with seed, and I searched pretty carefully for more.—A. M. E.

ZOÖLOGY.

KINSHIP OF ASCIDIANS AND VERTEBRATES.—The number of Max Schultze's Archiv (v. 4), just published, contains a letter to the editor from Prof. Kupffer of Kiel, in which that distinguished embryologist asserts that he has been studying the early history of a species of Phallusia, and that his results in large measure agree with those of Kowal-

* From the American Journal of Science and Arts, November, 1869, at Naturalists' Agency 27 cents.

ersky touching the startling vertebrate features of the early condition of these invertebrata. He reserves for the present the details about the exact formation of the nervous system, but quite confirms the fact of the existence of a notochord. He says: "At this stage one could not imagine a more beautiful model of a vertebrate embryo, with the neural tube on one side of the axis and a visceral tube on the other." He, moreover, describes in his species of Phallusia the neural tube as not merely an almost spherical vesicle, but as prolonged in the form of a fine hollow thread into the tail above the notochord or axis. He promises full details shortly, and we hope to be able to return to this most important matter. — *Nature, London.*

HOUSE WRENS. — I have had the pleasure of being acquainted with these little birds (*Troglodytes ædon*) for several years. They have bred in and around my house, until they have become so tame as sometimes to allow the children to handle them. They have become so numerous that I do not furnish boxes for all, and they make nests in many singular places; among others, in a bullet-pouch up chamber, a soldier's knapsack in an outbuilding. In both of these places the birds succeeded in rearing a brood. But the most singular place selected for a nest was the wooden stirrup of a saddle hanging in a shed, in which, however, the birds did not prosper, as the saddle was often used. They carried small dry twigs and other rubbish, consisting of pieces of steel wire, dried snakes' skin, etc., into the knapsack, enough to have filled a half bushel measure, filling the entire cavity, except a little corner which they lined with feathers, where they laid seven or eight eggs. I also noticed their superior instinct, if not reason, whilst building in a box near my kitchen door. The hole in the box would not admit the long twigs the birds tried to get in, and they fell to the ground. After many efforts and failures the wrens concluded by making a scaffolding, which they succeeded in doing by taking in several shorter sticks endwise, letting the ends project out of the hole; then they proceeded by laying the long twigs on these projecting ends, then getting into the box, and by sliding the long twig endwise until the end came opposite the hole, they pulled it in. I was amused to see one trying to carry a large nail heavier than itself. They are amusing little fellows in many ways. Their song is melodious, loud and clear, and I have often wondered that such loud music could be produced by anything so small. — WM. J. MCLAUGHLIN, *Centralia, Kan.*

DEEP SEA DREDGING OFF THE BRITISH ISLES. — Our Admiralty, at the instance of the Royal Society, placed a war steamer at its disposal for sounding, dredging, taking deep sea temperatures, and making other physical investigations. The steamer left about the middle of May; and I had charge of the expedition for the first cruise of two months. Prof. Wyville Thomson succeeded me; and Dr. Carpenter followed. We dredged at depths varying between ten and two thousand four hundred and thirty-five fathoms, everywhere getting mollusca, crustacea, and other inverte-

brate animals, in a living state. This expedition embraced the Atlantic Coasts of Ireland, the Hebrides, and Shetland. There was not any trace or indication of the Gulf Stream, but on the contrary, a northern fauna even as far south as Ushant. Many novelties occurred. — J. GWYN JEFFREYS (*in a letter to one of the editors*).

THE KINGFISHER'S NEST. — I have watched with some interest all that has been said in the NATURALIST about the breeding habits of this species, to see if my experience would be justified by that of any other observer. This has been nearly accomplished by Mr. Jones in the March number.

On the 18th of March, 1868, I collected eggs from two nests built near a mill-pond, in the excavation for the dam. Each hole was three feet deep; one elbowed to the right, the other to the left. In one was six eggs, in the other seven; all fresh. Each nest was composed of dry fish scales and small dry fish bones mixed with small pebbles of the size of a small pea. The scales and bones were free from smell, and were white and pure, and in each nest amounted to a fair handful.

About the first of June, 1869, on landing from a fishing excursion on one of our small lakes, I observed what I took to be a kingfisher's hole in a sandbank on the shore. While my bait and tackle were being loaded, I took a paddle and began to dig it out. The sand was soft and I proceeded five feet very rapidly, when the bird came rushing out. I went on digging with renewed hopes and made seven feet, when the paddle was no longer available for insufficient length, and I abandoned the job. — D. DARWIN HUGHES, *Marshall, Mich.*

SPECTRUM OF THE FIRE-FLY. — The spectrum given by the light of the common Fire-fly of New Hampshire (*Photinus?*) is perfectly continuous, without trace of lines either bright or dark. It extends from a little above Fraunhofer's line C, in the scarlet, to about F in the blue, gradually fading out at the extremities. It is noticeable that precisely this portion of the spectrum is composed of rays, which, while they more powerfully than any others affect the organs of vision, produce hardly any thermal or actinic effect. In other words, very little of the energy expended in the flash of the Fire-fly is wasted. It is quite different with our artificial methods of illumination. In the case of an ordinary gas light the best experiments show that not more than one or two per cent. of the radiant energy consists of *visible rays;* the rest is either invisible heat or actinism; that is to say over ninety-eight per cent. of the gas is wasted in producing rays that do not help in making objects visible. — C. A. YOUNG.

DEATH OF B. D. WALSH. — We regret to record the death of Mr. B. D. Walsh, the State Entomologist of Illinois, and the Senior Editor of the "American Entomologist," and former Editor of the "Practical Entomologist." For these duties he was admirably fitted. As an enthusiastic and thorough naturalist the small band of entomologists in this country will mourn his loss.